Notice No.2

Rules and Regulations for the Classification of Inland Waterways Ships July 2016

The status of this Rule set is amended as shown and is now to be read in conjunction with this and prior Notices. Any corrigenda included in the Notice are effective immediately.

Issue date: December 2016

Amendments to	Effective date	Mandatory Instrument
Part 1, Chapter 3, Sections 1 & 10	1 January 2017	
Part 1, Chapter 3, Section 4	1 January 2017	X
Part 3, Chapter 10, Section 2	1 January 2017	
Part 3, Chapter 12, Sections 3 & 5	1 January 2017	
Part 5, Chapter 4 , Sections 2 & 4	1 January 2017	X
Part 5, Chapter 6, Section 2	1 January 2017	X
Part 5, Chapter 16, Section 1	1 January 2017	

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Part 1, Chapter 3
Periodical Survey Regulations

■ *Section 1*
General

1.1 Frequency of surveys

1.1.1 The requirements of this Chapter are applicable to the Periodical Surveys set out in *Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys*. The periods between such surveys are as follows:

(a) Annual Surveys as required by *Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.1* or *Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.2*.
(b) Intermediate Surveys at intervals of 30 months, *see Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.3*.
(c) Special Surveys at five-yearly intervals, *see Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.4* and *Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.8*.
(d) Complete Surveys of machinery at five-yearly intervals, *see Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.10* and *Pt 1, Ch 2, 3.5 Existing ships – Periodical Surveys 3.5.14*.
(e) Consideration will be given to alternative periods between surveys where these are specified by local Administration or Authority Regulations for inland waterways vessels that trade solely within their jurisdictions.

■ Section 4
Special Survey – Hull requirements

4.2 Examination and testing

4.2.15 The sea connections, scuppers and sanitary discharges, and their attachments to the hull and the gratings at the sea inlets are to be examined. Ship side valves (i.e. sea connections, scuppers and sanitary discharges) are to be tested once reassembled.

■ *Section 10*
Machinery surveys – General requirements

10.3 Complete Survey of machinery

10.3.14 Where Thrusters and/or Podded Propulsors are fitted and have been assigned the ShipRight descriptive note **ThCM**, the degree of inspection required whilst in dock will be determined by the analysis of Condition Monitoring records. Refer to *ShipRight Procedure Machinery Planned Maintenance and Condition Monitoring*, Section 8. Note: Not applicable where a single thruster, or podded propulsor, is solely responsible for the propulsion and/or steering of the vessel.

Part 3, Chapter 10
Welding and Structural Details

■ *Section 2*
Welding

2.2 Fillet welds

(*Part only shown*)

Table 10.2.1 Weld factors

Item	Weld factor	Remarks
(1) General application:		except as required below
Watertight plate boundaries	0,34	
Non-tight plate boundaries	0,13	
Longitudinals, frames, beams, and other secondary members to shell, deck or bulkhead plating	0,10	
	0,13	in tanks
	0,21	in way of end connections
Panel stiffeners, etc	0,10	
Overlap welds generally	0,27	
(2) Bottom construction in way of holds or tanks:		
Non-tight centre girder: to keel	0,27	
to inner bottom	0,21	no scallops
Non-tight boundaries of floors, girders and brackets	0,21	in way of 0,2 x span at ends
	0,27	in way of brackets at lower end of main frame
Watertight bottom girders	0,34	
Connection of girder to inner bottom in way of longitudinal bulkheads supported on inner bottom	0,44	
Inner bottom longitudinals or reverse frames	0,13	under holds strengthened for heavy cargoes
Connection of floors to inner bottom in way of plane bulkheads or corrugated and double plate bulkheads supported on inner bottom. The supporting floors are to be continuously welded to the inner bottom	0,44	Weld size based on floor thickness Weld material compatible with floor material

Part 3, Chapter 12
Ship Control Systems

Existing Section 3 has been deleted in its entirety.

■ *Section 3*
Fixed and steering nozzles

3.1 General

3.1.1 Fixed and steering nozzles are, in general, to be in accordance with *Pt 3, Ch 13, 3 Fixed and steering nozzles* of the *Rules and Regulations for the Classification of Ships.*

■ *Section 5*
Equipment

5.9 Chain cables

5.9.1 An easy lead of the cables from the windlass to the anchors and chain lockers is to be arranged.

Existing paragraphs 5.9.1 *to* 5.9.7 *have been renumbered* 5.9.2 *to* 5.9.8.

5.13 Structural requirements

5.13.2 ~~An easy lead of the cables from the windlass to the anchors and chain lockers is to be arranged. Where cables pass over or through stoppers, these stoppers are to be manufactured from ductile material and be designed to minimise the probability of damage to, or snagging of, the cable. They are to be capable of withstanding without permanent deformation a load equal to 80 per cent of the Rule breaking load of the cable passing over them.~~ Where cables pass through stoppers, these stoppers are to be manufactured from ductile material and be designed to minimise the possibility of damage to, or snagging of, the cable. They are to be capable of withstanding without permanent deformation a load equal to 80 per cent of the Rule breaking load of the cable passing over them. The supporting structure is to be adequate for these loads.

5.13.7 ~~Provision is to be made for securing the inboard ends of the cables to the structure. This attachment should have a working strength of not less than 63,7 kN (6,5 tonne-f) or 20 per cent of the breaking strength of the chain cable, whichever is the greater, and the structure to which it is attached is to be adequate for this load. Attention is drawn to the advantages of arranging so that the cable may be slipped from an accessible position outside the chain cable locker. The proposed arrangement for slipping the chain cable, if constructed outside the chain locker, must be made watertight.~~ Provision is to be made for securing the bitter end of the chain cable to the ship structure. The fastening for securing the bitter end is to be capable of withstanding a force of not less than 15 per cent and not greater than 30 per cent of the minimum breaking strength of the as fitted chain cable. It is to be provided with suitable means such that, in case of emergency, the chain cable may be easily slipped to sea from an accessible position outside the chain cable locker. Where the mechanism for slipping the chain cable to sea penetrates the chain locker bulkhead, this penetration is to be made watertight.

5.13.8 Alternatively the cable end connection may be accepted where it has been designed and constructed to a recognised National or International Standard.

5.13.9 The cable clench supporting structure is to be adequately stiffened in accordance with the breaking strength of the fastening provided.

Existing paragraph 5.13.8 *has been renumbered* 5.13.10.

Part 5, Chapter 4
Main Propulsion Shafting

■ *Section 2*
Materials

2.1 Materials for shafts

2.1.4 Where materials with greater specific or actual tensile strengths than the limitations given above are used, reduced shaft dimensions or higher permissible vibration stresses are not acceptable when derived from the formulae used in *Pt 5, Ch 4, 3.2 Intermediate shafts, Pt 5, Ch 4, 3.4 Screw shafts and tube shafts, Pt 5, Ch 4, 3.5 Hollow shafts* and *Pt 5, Ch 6, 2.5 Limiting stress in propulsion shafting* unless, for intermediate shafts only, it is verified that the materials exhibit a similar fatigue life to conventional steels through compliance with the requirements in *Pt 5, Ch 4, 4 Approval of alloy steel used for intermediate shaft material*.

■ *Section 4*
Approval of alloy steel used for intermediate shaft material

4.1 Application

4.1.1 The requirements of *Section 4* are, in addition to the requirements of the *Rules for the Manufacture, Testing and Certification of Materials*, *Ch 5*, *3 Forgings for shafting and machinery*, to be applied to the approval of alloy steel which has a minimum specified tensile strength greater than 800 N/mm^2, but, not exceeding 950 N/mm^2 intended for use as intermediate shaft material.

4.2 Torsional fatigue test

4.2.1 A torsional fatigue test is to be performed to verify that the material exhibits a similar fatigue life to conventional steels. The torsional fatigue strength of the material is to be equal to or greater than the permissible torsional vibration stress τ_c given by the formulae in *Pt 5, Ch 6, 2.5 Limiting stress in propulsion shafting*.

4.2.2 The test is to be carried out with notched and unnotched specimens respectively. For calculation of the stress concentration factor of the notched specimen, fatigue strength reduction factor β should be evaluated in consideration of the severest torsional stress concentration factor in the design criteria.

4.2.3 Test procedures are to be in accordance with Section 10 of ISO 1352 and the test conditions applied are to be in accordance with *Table 4.4.1 Test condition*. Mean surface roughness is to be less than 0,2μm Ra with the absence of localised machining marks verified by visual examination at low magnification (x20) as required by Section 8.4 of ISO 1352.

Table 4.4.1 Test Condition

Loading type	Torsion
Stress ratio	*R* = -1
Load waveform	Constant amplitude sinusoidal
Evaluation	S-N curve
Number of cycles for test termination	1 x 10^7

4.2.4 The measured torsional fatigue strength for continuous operation, τ_c, and torsional fatigue strength for transient operation, τ_t, are to be equal to or greater than the values given by the following formulae:

$$\tau_c \geq \frac{\sigma_u + 160}{6} . C_k . C_d \quad \text{for } r = 0$$

$$\tau_t \geq 1.7 . \tau_c . \frac{1}{\sqrt{C_k}}$$

Where

C_k = a factor for different shaft design features, *see Table 6.2.1 C_k factors, Pt 5, Ch 6, 2.4 Symbols and definitions 2.4.4*

C_d = size factor, *see Pt 5, Ch 6, 2.4 Symbols and definitions, 2.4.1*

σ_u = specified minimum tensile strength of the shaft material, in N/mm^2

r = speed ratio, N/N$_s$, *see Pt 5, Ch 6, 2.4 Symbols and definitions, 2.4.1*

4.3 Material requirements

4.3.1 The steels are to have a degree of cleanliness as shown in *Table 4.4.2 Cleanliness requirements* when tested according to ISO 4967 method A. Representative samples are to be obtained from each heat of forged or rolled products.

Table 4.4.2 Cleanliness requirements

Inclusion group	Series	Limiting chart diagram index l
Type A	Fine	1
	Thick	1
Type B	Fine	1,5
	Thick	1
Type C	Fine	1
	Thick	1
Type D	Fine	1
	Thick	1
Type DS	-	1

Part 5, Chapter 6
Shaft Vibration and Alignment

■ *Section 2*
Torsional vibration

2.5 Limiting stress in propulsion shafting

2.5.4 In general, the tensile strength of the steel used is to comply with the requirements of *Pt 5, Ch 4, 2 Materials*. For the calculation of the permissible limits of stresses due to torsional vibration, σ_u is not to be taken as more than 800 N/mm^2 in the case of alloy steel intermediate shafts, or 600 N/mm^2 in the case of carbon-manganese steel intermediate thrust and propeller shafts unless, for intermediate shafts only, it is verified that the materials exhibit a similar fatigue life to conventional steels through compliance with the requirements in *Pt 5, Ch 4, 4 Approval of alloy steel used for intermediate shaft material.*

Part 5, Chapter 16
Azimuth Thrusters

■ *Section 1*
General requirements

1.3 Condition Monitoring

1.3.1 Where Thruster Condition Monitoring (**ThCM**) ShipRight descriptive note has been requested, refer to *ShipRight Procedure Machinery Planned Maintenance and Condition Monitoring*, Section 8.

Existing sub-Section 1.3 *has been renumbered* 1.4.

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